



Programmable options

The BCU can be programmed with a number of options to satisfy specific market requirements and customer preferences. The options can be set using TestBook.

Function	Option	Details
Transmission	Manual	The vehicle is fitted with manual transmission.
	Automatic	The vehicle is fitted with automatic transmission.
Front fog lamps	None	The vehicle is not fitted with front fog lamps.
	Main	The front fog lamps will operate if the headlamps are on main beam.
	No main	The front fog lamps will not operate if the headlamps are on main beam.
Interlocks	None	The vehicle is not fitted with key, shift or transfer box interlocks.
	Shift	The vehicle is fitted with key, shift and transfer box interlocks.
	No transfer	The vehicle is fitted with key and shift interlocks, but not a transfer box interlock.
Daylight running lamps	None	The vehicle is not fitted with daylight running lamps.
	No main	The daylight running lamps are on if the headlamp main beams are off.
	No heads	The daylight running lights are on with headlamp main and dipped beams off and the gearbox not in Park.
Programmed wash/ wipe	Normal	The front wipers operate if the front wash is operated.
	No wipe	The front wipers do not operate if the front wash is operated.
Key-in warning	Disabled	The ignition key in audible warning is disabled.
	Enabled	The ignition key in audible warning is generated if the ignition key is in and the driver's door is open.
Electric front seats	None	The vehicle is not fitted with electric front seats.
	Normal	Electric seat adjustment is available for 45 seconds after the driver's door opens or if the ignition is on.
	Ignition II	Electric seat adjustment is available if the ignition is on.
Electric front windows	Driver cancel	The front windows will be disabled 44 seconds after the driver's door is opened.
	All cancel	The front windows will be disabled 44 seconds after any door is opened.
	No cancel	The front windows will be disabled when the ignition is turned off.
Heated front screen	Fitted	The vehicle is fitted with heated front screens.
	None	The vehicle is not fitted with heated front screens.
Rear windows and sunroof	Driver cancel	The rear windows and sunroof will be disabled 44 seconds after the driver's door is opened.
	All cancel	The rear windows and sunroof will be disabled 44 seconds after any door is opened.
	No cancel	The rear windows and sunroof will be disabled when the ignition switch is turned off.
Gear position indicator illumination	Always	The automatic gearbox selector illumination is on when the ignition is on.
	Sidelights	The automatic gearbox selector illumination is on when the ignition is on and the sidelights are off.
Hill descent control	None	The vehicle is not fitted with hill descent control.
	Fitted	The vehicle is fitted with hill descent control.
Courtesy headlamps	Disabled	The vehicle is not fitted with courtesy headlamps.
	Enabled	The vehicle is fitted with courtesy headlamps.
Odometer error warning	Disabled	The odometer will not flash if there is an odometer error.
	Enabled	The odometer will flash if there is an odometer error.

BODY CONTROL UNIT

Function	Option	Details
Seatbelt warning lamp	Timed	The warning lamp is on for 6 seconds after the ignition is turned on.
	Buckle	The warning lamp is on for 6 seconds after ignition is turned on or until the buckle is fastened.
	Ignition II	If the buckle is unfastened when the ignition is turned on then the warning lamp comes on for 6 seconds.
	Disable	The warning lamp is not used.
Seatbelt audible warning	Timed	The audible warning is on for 6 seconds after the ignition is turned on.
	Buckle	The audible warning is on for 6 seconds after the ignition is turned on or until the buckle is fastened.
	Ignition II	If the buckle is unfastened when the ignition is turned on then the audible warning is on for 6 seconds.
	Disable	The audible warning is not used.
Bulb failure warning	Disabled	Direction indicator bulb failure detection is disabled.
	Enabled	Direction indicator bulb failure detection is enabled.
Superlocking	None	Superlocking is not available.
	Double	The vehicle will superlock on a double press of the remote transmitter or double key turn.
	Single	The vehicle will superlock on a single press of the remote transmitter or a single key turn.
	No key	The vehicle will superlock on a single press of the remote transmitter but not with the key.
Door unlocking	Not SPE	The SPE (Single Point Entry) function is not used. All doors unlock on a remote transmitter press.
	SPE	Only the driver's door unlocks on the first remote transmitter press, all other doors on the second press.
Alarm disarming	Always	Operation of the key in the driver's door always disarms the vehicle.
	Key only	Operation of the key in the driver's door only disarms the vehicle if it was locked with the key.
	Key never	The security system is not disarmed by the key (except for EKA).
Inertia switch	No hazards	Operation of the inertia switch does not operate the hazard warning lamps.
	Hazards	Operation of the inertia switch operates the hazard warning lamps.
Speed locking	Disabled	Speed related locking is disabled.
	Enabled	Speed related locking is enabled. The door locks are disabled when the vehicle is moving.
Volumetric sensing	Disabled	Volumetric sensing is disabled.
	Enabled	Volumetric sensing is enabled.
Alarm	Disabled	The vehicle is not fitted with a security system.
	Enabled	The vehicle is fitted with a security system.
Passive immobilisation	Disabled	Passive immobilisation is disabled.
	Enabled	Passive immobilisation is enabled.
Hazard warning lamps	Disabled	The hazard warning lamps do not flash on security system arm, disarm or trigger.
	Enabled	The hazard warning lamps flash on security system trigger only.
	All	The hazards flash on security system arm, disarm and trigger.
Mislocking audible warning	Disabled	Mislock audible warnings are disabled.
	Enabled	Mislock audible warnings are enabled.
Alarm sounder	Alarm	Audible warnings are given by the security system sounder only.
	Both	Audible warnings are given by both the security system sounder and the vehicle horn.
	Vehicle	Audible warnings are given by the vehicle horn only.
	BBUS	Audible warnings are given by the security system sounder, vehicle horn and BBUS.
	Disabled	Audible warnings are not given.



Function	Option	Details
Acclimatisation locking	Disabled	The vehicle cannot be locked if the ignition is on.
	Enabled	The vehicle can be locked if the ignition is on and the engine is running.
Alarm tamper	Disabled	The security system LED does not flash when the security system has been tampered with.
	Enabled	The security system LED flashes when the security system has been tampered with.
Engine immobilised	LED off	The security system LED does not flash when the engine is immobilised.
	LED flash	The security system LED flashes when the engine is immobilised.
Low battery warning	Disabled	The security system LED does not flash when the remote transmitter battery is low.
	Enabled	The security system LED flashes when the remote transmitter battery is low.
Emergency Key Access (EKA)	Disabled	EKA is disabled.
	Enabled	EKA is enabled and the door locks operate electrically.
	No unlock	EKA is enabled, but the door locks do not operate electrically.

Anti-theft system

The BCU controls the logical switching operations for enabling and activating the anti-theft system. Features include:

- Perimetric protection – monitors the condition of doors and hinged panels.
- Volumetric protection – monitors the vehicle's interior space.
- Remote locking, superlocking and unlocking functions.
- Engine immobilisation and remobilisation.
- Advanced mislock detection and automatic compensation.
- EKA code functions.
- Customer configuration options.
- Market configuration options.

Immobilisation

The immobilisation system comprises the following components:

- RF receiver.
- RF transmitter/ transponder.
- Transponder coil.
- BCU.
- Door switches, door lock switches and bonnet switch.
- IDM.
- ECM.
- Starter solenoid relay.
- Status LED.

Alarm system

The alarm system comprises the following components:

- RF receiver.
- RF transmitter.
- BCU.
- IDM.
- Door switches, door lock switches and bonnet switch.
- Battery backed-up sounder (BBUS).
- Status LED.

On non NAS vehicles, power supply for the alarm sounder and the battery BBUS is provided through two relays in the passenger compartment fuse box. Each of the coils of the alarm relays are directly connected to the IDM which controls their operation under the direction of BCU signals received via the serial data bus.

On NAS vehicles, an audible warning is provided through operation of the vehicle horns. The BCU provides an earth path for the coil of the horn relay to initiate vehicle horn operation.

ALARM SYSTEM AND HORN, DESCRIPTION AND OPERATION, Description.

BODY CONTROL UNIT

Central Door Locking (CDL)

The BCU carries out the logic control operation for CDL. A CDL switch is mounted on the fascia panel and has two inputs to the BCU, one for lock and one for unlock.

Door locking and unlocking can be performed using the remote transmitter in the keys and the receiver unit located above the vehicle's headlining, behind the rear sunroof aperture. The receiver detects the signals sent from the remote transmitter and sends a decoded signal to the BCU for processing.

Four methods of door locking are available:

- Remote handset locking.
- Vehicle key locking.
- CDL switch locking.
- Speed related locking.

Two security levels of door locking are available, CDL and Superlocking. The anti-theft alarm system works in conjunction with the CDL system.

Electric windows and sunroof

The BCU controls the logical operations and the timing periods for the electric front windows. The rear windows are hard-wired and the two electric sunroofs are controlled by a dedicated ECU which is enabled by the BCU.

The front windows are electrically operated using two rocker switches located in the centre console. Electric motors are located in each of the front doors.

The rear windows are enabled by the IDM controlling the operation of the rear window relay located in the passenger compartment fuse box.

Wipers and washers

The wiper and washer functions are controlled by the BCU and the IDM.

The front wipers and washers are operated from the switch stalk located on the right hand side of the steering column and only operate when the ignition switch is in position I or II. The front wipers are operated by a motor located below the windscreen plenum.

WIPERS AND WASHERS, DESCRIPTION AND OPERATION, Description.

The BCU controls the wiper motor frequency of operation via the IDM when intermittent wipe or wash is selected. The front intermittent wipe option features five different intermittent delay periods. The shortest delay period is 3 seconds and this is increased by 2 second increments up to a maximum delay of 11 seconds. The desired delay period for the front wipers is set by the position of the rotary switch located on the wiper column stalk.

The rear wiper switch is located on the instrument pack cowl and is latched when pressed. The rear wiper electric motor is located in the tail door. The rear wiper operation is controlled according to a programmed strategy via the BCU and the IDM. The BCU also checks for a signal from either the reverse lamp switch located in the vehicle gearbox (manual gearbox models) or the gear position switch (automatic gearbox models) for operating the rear wipers when the vehicle is in reverse. The rear wiper and washer only operate when the ignition switch is in position II.

The front and rear washer pumps and the headlamp powerwash (where fitted) are also controlled through the BCU. The washers are operated from electric pumps attached to the washer reservoir located in the left hand wheel arch. The front wash switch is located on the wiper column stalk and is pulled towards the steering wheel to select the washer function. When the front washers are operated, the wipers are also activated for three full cycles. The rear wash switch is located on the instrument pack cowl. The BCU programme can be configured in one of two modes of operation:

- No wiper operation when the wash switch is pressed.
- Wiper action after an initial delay of 400 ms.

Headlamp wash is activated by the BCU via the IDM and operates when the headlamps are on and the front washers function is selected.